wherein

(a) Xaa at positions A21 and B3 are, independently, any amino acid residue which can be coded for by the genetic code except Lys, Arg and Cys;

(b) Xaa at position B1 is Phe or is deleted;

(c) Xaa at position B30 is deleted; and

(d) the ϵ-amino group of Lys^{B29} is substituted with a lipophilic substituent having at least 10 carbon atoms;

wherein the lipophilic substituent is benzoyl, phenylacetyl, cyclohexylacetyl, 3,5-diidotyrosyl or cyclohexylpropionyl.

141. The insulin derivative of claim 140, wherein the lipophilic substituent is benzoyl.

142. The insulin derivative of claim 140, wherein the lipophilic substituent is phenylacetyl.

143. The insulin derivative of claim 140, wherein the lipophilic substituent is cyclohexylacetyl.

144. The insulin derivative of claim 140, wherein the lipophilic substituent is 3,5-diidotyrosyl.

145. The insulin derivative of claim 140, wherein the lipophilic substituent is cyclohexylpropionyl.

REMARKS

This application is a divisional of serial no. 08/975,365 filed November 20, 1997. Claims 1-67 have been canceled without prejudice or disclaimer. Claims 68-145 have been added and therefore are pending. The newly presented claims are supported by the original claims.

The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application.

Respectfully submitted,

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